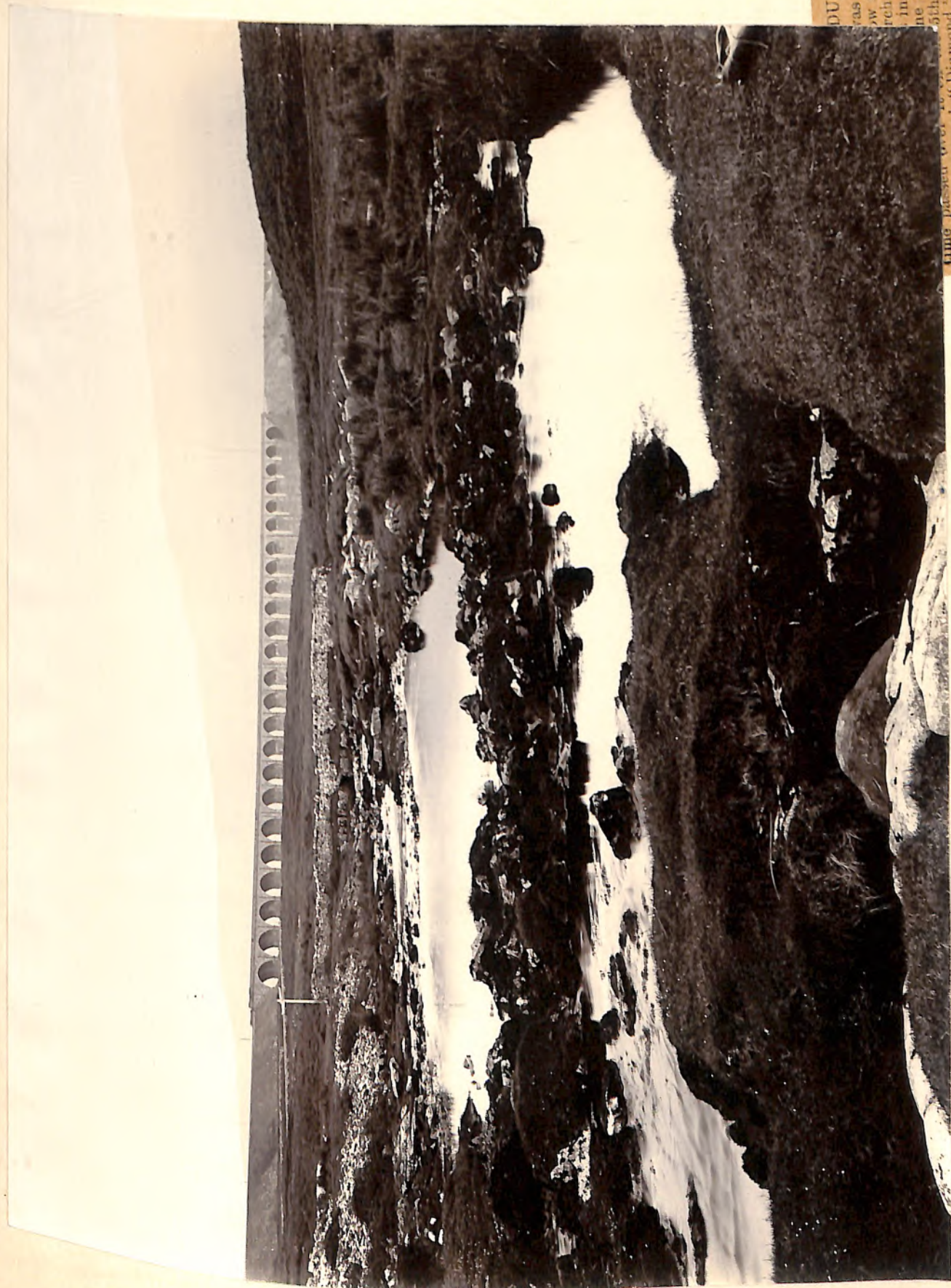


the whole day to this walk, we may leave out the visit to Hellen Pot—which we can better afford to do if we have already seen the two Penyghent “pots” and Gaping Gill—and in this case take the *noon* train to Ribblehead, and then make for the same point, Gearstones.

Batty Moss Viaduct. The great viaduct that we see on our left was one of the most important works on the line, and was justly regarded, at its completion, as a great engineering feat. It is the longest viaduct between Settle and Carlisle,—its total length being 1328 feet. The highest arch is 165 feet from the foundation. The span of the arches is 45 feet. The masonry is of marble, quarried from the neighbouring hills.

An uninviting Land. From Gearstones we look out upon a bare, wild uninviting land. We wonder what the farmer can get out of it, and what we are now likely to find in it. Let us see. The district that lies between Gearstones and Horton is known for its numerous ravines. The streams that flow from Cam Fell, Cosh Knot, and Penyghent have cut for themselves deep channels in the limestone of the lower slopes. Some of the ravines are very romantic, some of them very picturesque. A ravine is locally a “gill.” The lover and student of Nature will feel at home in these gills, and the photographer might find in them excellent use for as many “plates” as he would care to carry. The three most noticeable of these ravines are Thornes Gill, Ling Gill and Brow Gill. In this order they should be visited, and in these three the tourist may find employment for a long afternoon.



Batty Moss Viaduct.

DUCT.
 was commenced
 as it is bearing
 rails are turn-
 in such a state
 ne for the first
 5th inst. The
 time passed over
 locomotive, named
 the management of
 er; Thomas Bullock,
 guard. The passen-
 Messrs. W. Hirst,
 Condy, and Fred
 Viaduct is one of
 the Settle and Carlisle line.

the whole
to Hellen
have alrea
Gaping Gi
Ribblehead
stones.

Batty Moss
Viaduct.

completion,
longest viadu
length being
from the four
feet. The ma
neighbouring .

An uninviting
Land.

what we are r
The district tha
is known for i
that flow from C
have cut for the
stone of the low
very romantic, s
ravine is locally a
Nature will feel at
grapher might find
"plates" as he wo
noticeable of these
Gill and Brow Gi
visited, and in the
ployment for a long

Sept. 1874.

BATTY MOSS VIADUCT.
This immense structure was commenced nearly four years ago, and now it is nearing completion. Its numerous arches are turned, and the permanent way is in such a state of forwardness that an engine for the first time passed over it on the 31st inst. The locomotive, named "Diamond," was under the management of J. Pilgrim, engine driver; Thomas Ballock, stoker; Peter Markees, guard. The passengers on the occasion were Messrs. W. Hirst, G. Hirst, T. Locks, Richard Coney, and Fred Jones. The Batty Moss Viaduct is one of the finest and largest on the Settle and Carlisle line.

Batty Moss Viaduct.



Thornes Gill

THORNES
GILL.

This gill runs within a field's length of Gearstones. Above Gearstones the stream is called Gale Beck; and it is in this direction that the true source of the Ribble is found. Ribblehead is the head of the dale, but it does not mark the source of the river. To find the true source we must get away beyond Gearstones to Newby Head. But only in a very wet season would it be needful to go so far to find the beginning of the stream. The water gradually dwindles off to a mere dribblet,—then ceases; and beyond is the dry, stony bed of Gale Beck.

KATNOT
CAVE.

Opposite Gearstones there is a foot-bridge. This the tourist should cross, and then follow the gill a short distance down its course. He will pass a succession of little cascades, and when he has reached the most romantic part of the glen he will find the entrance to Katnot Cave. Candles are needed for the exploration of it, and it is not at all the place in which to feel easy in a new black suit. There is a good deal of drip in the cave; also on some parts of the rock-surface there is a sticky mucous, and the tourist must be careful, or he will paint his back and shoulders with a colour and in a style that will not add to the beauty of his person. It may not be amiss to caution the tourist against the temptation to leave off his coat. When the day is hot the atmosphere of the cave is at first deliciously cool; but after a few minutes it is unpleasantly cold, and it would be easy to get a chill that might lead to unhappy results. It would be best to borrow an old coat at the inn. In the cave there are some streams and pools which are crossed by

step-stones, and here the tourist must use some care, or he will give his foot a cold bath. There is a singular fascination in exploring such a cave without a guide. The strangeness, the weirdness of the place; the feeling that every step is a step into the unknown; the wonder—"what next?" and the low murmur of hidden waters—all this gives a pleasurable excitement that is not easily forgotten. Katnot Cave has not the wonder and beauty of Clapham Cave; but a writer of the last century speaks of the "icicles of various shapes and colours that were pendant from the roof." They are now gone. There are people who cannot see a rare fern without rooting it up, or a stalactite without knocking it off. And it is these banditti who have despoiled Katnot Cave. Yet in its nakedness it is worth exploring; and, from the large number of names with recent dates that have been smoked, scratched, and chiselled on the rock, it is evident that it has still its many visitors.

On leaving the cave the tourist might walk up the gill for, say, half a mile above Gearstones. The bed of the stream is worth examining. Its most notable feature is the great number of oval and circular holes which have been scoured out by loose stones under the action of the stream. Many of these are as shapely and symmetrical as if wrought by hand. Fossils may be found in Gale Beck, and small pieces of black marble which when polished show the fossil-nature of the stone.

LING GILL. Beyond Gearstones, and turning to the right over the moor, is an old road. Walking along this road, and at a distance of two miles



THORNS GILL, RIBBLEHEAD.



LING GILL.

from the inn, we reach Ling Gill Bridge, which itself tells us that it "was repayed at the Charge of the whole West Riding, anno 1765." Here we are at the head of the glen, and we should have to go a long way to find one finer and more romantic. As Hellen Pot is pre-eminent in the land of deep chasms, so is Ling Gill in this land of ravines. Its great crags reach a height of nearly 300 feet, whilst the bed of the stream is strewn with blocks and boulders of every size and shape. The stream rises on Cam Fell, and at a short distance above Selside unites its waters with the waters from Thornes Gill. The streams thus united become the Ribble. Ling Gill asks for time and patience and pluck. The tourist should try to thread his way through the glen. It is not an easy task. The slopes are thickly wooded, and the bed of the stream is extremely rough. He will have to swing himself round some awkward corners; will be able to test the length and strength of his stride; may sometimes find himself made a ritualist against his will; will give his foot occasional immersions; and altogether will do such new and wonderful things in gymnastics that there ought to be a detective camera behind him to record them all and show them to the world. We must get down into Ling Gill if we would know it, and feel how delightfully romantic it is.

Ribble and Wharfe. Let us now look back and in thought—
it must be only in thought—follow the path
of this stream beyond Ling Gill Bridge,
and for some three miles upwards to its source,—to
the point where, near Cam Houses, we find its earliest
runlet, its topmost spring. Almost within a stone's-
throw of this we find another spring, but the water

that flows from it takes a contrary path. This last is the Outershaw Beck which is met at Beckermonds by Greenfield Water, and is thenceforth called the Wharfe; the first, as we have seen, joins Gale Beck above Selside and is thenceforth called the Ribble. Here, then, we touch the line that parts the eastern from the western water-system. We have been told as to one ridge on the Fell, some 1880 feet above the sea-level, that in a time of rain the water from one side of it runs into the Outershaw Beck and the water from the other side of it into the Cam Beck. Thus a rain-cloud might be hanging over the Fell, and a passing breeze might decide whether that cloud should shed its waters on this side of the ridge or on that; that is, whether they should make eastward for the German Ocean or westward for the Irish Sea.

BROW
GILL. From the foot of Ling Gill may be seen a farm-house. In front of the house there is a wooden bridge. We cross this and keep near the wall until we reach a stile. When in the next field we keep well to the right, as if making for Penyghent, and in a few minutes we reach another glen. This is Brow Gill. Here there are no sloping banks. The stream has simply cut for itself a channel in the rock; but in doing this it has made its path very interesting. Brow Gill has its special features, and is well worth exploring, even after Ling Gill has been visited. At one part of its course the stream dips under a platform of rock which is called "god's bridge,"—so called probably because it was the work of nature, not of man. This is a good point at which to begin the ascent of the ravine. A little way above "god's bridge" the



CIRCULAR No. 355.

Yorkshire Naturalists' Union.

President :

GREEVZ FYSHER, Esq., Leeds.

Hon. Secretaries :

F. A. MASON, F.R.M.S., 29 Frankland Terrace, Leeds.
W. H. PEARSALL, D.Sc., F.L.S., The University, Leeds.

Local Secretary :

RILEY FORTUNE, F.Z.S., Moorlands, Harlow Hill, Harrogate.

Hon. Treasurer :

S. D. PERSY FISHER, Sackville Street, Leeds.

The 355th Meeting

WILL BE HELD AT

HORTON IN RIBBLESDALE

For the investigation of the district including

PEN-Y-GHENT and MOUGHTON,

During Whit Week-end,

Saturday, June 7th, to Monday, June 9th, 1930.

HEADQUARTERS.—The Golden Lion Hotel, Horton, Settle. Terms, 10/6 per day for bed, breakfast, sandwiches and dinner. Owing to the demand of anglers, accommodation is very limited, so early application is necessary. If rooms are not available at the Hotel, Mrs. Heseltine will endeavour to procure rooms outside. Accommodation may also be had at Mrs. Dinsdale, Brackenbottom, Horton, Settle. There is a good bus service from Settle, and the journey is a short one, and some members may prefer to stay at Settle, where there is good hotel accommodation.

[P.T.O.]

that flows from it tal
the Outershaw Beck
Greenfield Water,
Wharfe; the first, a
above Selside and i
Here, then, we touc
from the western w
as to one ridge on th
sea-level, that in a
side of it runs into th
from the other side c
rain-cloud might be
passing breeze mig
should shed its wat
that; that is, wheth
the German Ocean

BROW
GILL.
From the foot
house. In fro
bridge. We
until we reach a st
keep well to the rig
and in a few minute
Brow Gill. Here t
stream has simply c
but in doing this it
Brow Gill has its
exploring, even afte
one part of its cours
of rock which is c
probably because it
This is a good poi
the ravine. A littl

TRAVELLING FACILITIES.—

Trains leave Leeds 6-10; arrive Horton 8-35.
" " " " 10-18; " " " " 12-7.
From the North " " " " 10-40.

ROUTES.—The days (either Saturday or Monday) on which the following excursions will be made will depend on the weather, as a fine day is necessary for the ascent of Pen-y-ghent, and if Saturday proves to be promising they will be taken in the following order:—

SATURDAY: *via* Foxup Road to Hull Pot, and thence up Pen-y-ghent by way of Hunt Pot.

MONDAY: Horton Lime Works to Arcow Wood and then on to Moughton Scar, returning along the top.

A start will be made at 10 a.m. each day, but arrangements will be made to enable visitors arriving by the 10-40 a.m. train to get into touch with the main party.

It is hoped to arrange an excursion to Colt Park Wood, Ribbleshead, or to Ling Ghyll, during the week-end, but final arrangements for this can only be made after the party assembles.

During the week-end the excursions will be under the leadership of Messrs. Chris. A. Cheetham and H. H. Sturdy (of Settle), assisted by members of the Settle Naturalist and Antiquarian Society.

BOOKS AND MAPS.—The one-inch Ordnance Survey Maps (coloured edition), Sheets Nos. 20 and 25, include Settle and the area to be investigated. Through the courtesy of Dr. H. C. Versey, a geological map of the districts to be visited will be available for members' use at Headquarters. Notes on the geology and natural history of the same area will be found in Circulars Nos. 96 and 205; Lee's 'Flora of West Yorkshire,' and Kendall and Wroot's 'Geology of Yorkshire' should be consulted.

THE DISTRICT AND ITS GEOLOGY.—Dr. H. C. Versey writes: Horton is situated near the unconformable junction of horizontal Carboniferous Limestone on folded Silurian, Ordovician and even earlier rocks. This unconformity can be well studied on the route to Moughton. The irregularities in this junction are worthy of study, for in one hollow, Prof. Garwood found evidence of the earliest British freshwater mollusca. The so-called Horton 'granite'—a coarse grit—has been considered Pre-Cambrian, but it would well repay examination of its contained fragments and of its southern junction. The Ordovician rocks are folded into an anticline at Crag Hill, and Bala fossils may be collected. On the other side of Moughton Fell the strikingly banded Moughton whetstone offers a perennial problem.

The route to Pen-y-ghent offers opportunity for a study of the Carboniferous succession from the S beds near Horton up to the Millstone Grit capping on Pen-y-ghent. The important mapping horizons with *Cyrtina septosa* and *Girvanella* may be traced, but there is so far no record of the *Orionastræa* band occurring higher up.

The whole area is full of interesting scenic features, including the desk structure exhibited by Pen-y-ghent and series of caves in the Limestone area. Many of these are on lines of fracture, and various stages of collapse may be noticed.

BOTANY (Flowering Plants and Ferns).—Mr. H. H. Sturdy supplies the following notes: The plants which should be seen on the Pen-y-ghent excursion are, on the way up, at Hull and Hunt Pot, *Saxifraga aizoides*, *Sedum telephium*, *Cochlearia alpina*, *Sagina nodosa* and *Draba incana*. Between here and the hill may be found *Listera cordata*, *Vaccinium oxycoccus* and *Empetrum nigrum*.

Amongst the scree *Asplenium viride*, *Saxifraga hypnoides*, *Lycopodium selago* and *Arenaria verna* grow, and on the cliffs above we find the gem of the hill, *Saxifraga oppositifolia*, with *Sedum rhodiola*, *Scabiosa columbaria*, *Galium sylvestre* and *Sesleria cærulea*.

At the top grows *Carex rigida*, *Rubus chamæmoris* and *Vaccinium vitis-idaea*.

The limestone scar wood at Colt Park contains, among other plants, the following: *Trollius europæus*, *Actæa spicata*, *Rubus saxatilis*, *Potentilla alpestris*, *Carduus heterophyllus*, *Convallaria majalis*, *Polygonatum officinale* and *Geranium sylvaticum*.

A very fine form of *Viola tricolor* grows here which should be examined by specialists, and here is the highest altitude at which *Gagea lutea* is found in Britain. It is growing in a loamy soil, in the fissures, with other woodland species, such as *Scilla nutans*, *Sauvagea europæa*, *Mercurialis perennis* and *Campanula latifolia*.

Returning to Horton, at Selside, we can see *Arenaria gothica*, *Sedum villosum*, *Primula farinosa* and *Draba muralis*.

If time permits, Moughton Scar might be examined. The striking feature here is *Juniperus communis*, and other plants are *Polygonum viviparum*, *Silene maritima*, *Veronica spicata*, *Thalictrum minus*, *Schæenus nigricans*, *Selaginella selaginoides*, *Lastrea rigida* and *Polycaenum calcareum*.

Mosses and Hepatics.—Mr. Chris. A. Cheetham writes: Bryologists will have opportunity to examine various forms of *Andreaea rothii* including the sub-species *A. crassinervium*, as this and *A. petrophila* are both abundant. On the higher limestones the var. abbreviatum of *Orthothecium intricatum* described in 'Journal of Botany,' November, 1923, should be seen. Other mosses of the district are *Campylopus atro-virens*, *Rhabdoweisia fugax*, *Seligeria pusilla* and *recurvata*, *Encalypta ciliata*, *Grimmia funalis* and *subsquarrosa*, *Racomitrium prolesum*, *Bartramia ithyphylla*, *Plagiobryum zivii*, *Bryum alpinum*, *Mnium orthorrhynchum*, *Oligotrichum hercynicum*, *Diphyscium foliosum*, *Myurella julacea*, *Pseudoleskea catenulata*, *Cylindrothecium concinnum*, *Hypnum sarmentosum* and *giganteum*, *Hylocomium rugosum*. There are good opportunities for work among the Hepatics, our knowledge of which, it is hoped, will be extended.

Lichens.—Mr. W. E. L. Wattam writes: In a district so rich geologically the lichen flora will be both rich and varied. Amongst the species recorded are: *Sphaerophorus globosus* A. L. Sm., *Collema multifidum* Schaer., *Synochoblastus rupestris* A. L. Sm., *Leptogium lacerum* Gray, *Solorina saccata* Ach., *Cetraria islandica* Ach., *C. aculeata* Fr., *Evernia prunastri* Ach., *E. furfuracea* Mann, *Placodium murorum* D. C., *Parmelia tiliacea* Ach., *P. lævigata* Ach., *Lacanora cartilaginea* A. L. Sm., *L. gelida* Ach., *Biatorina cæruleonigricans* A. L. Sm., *Dermatocarpon minutum* Th. Fr., *D. lachneum* A. L. Sm. The Cladoniae are also well represented.

Fungi (F. A. M.): The Juniper scrub on Moughton, reached *via* Moughton Plantation from Horton, should be visited by members interested in the fungi and plant galls to see *Gymnosporangium clavaraforme*. Mr. Cheetham reports that the teleutospore stage is at present very conspicuous. The acedial stage has not been noted in the district, and a search should be made for the galls on Hawthorn which this species produces. It is the best time to collect parasitic species generally, and the rarer plants met with on this excursion should be examined, particularly those of the bogs. The Saxifrages and species of *Salix* will repay careful examination in this respect.

VERTEBRATE ZOOLOGY.—Mr. Riley Fortune writes:

Mammals.—Many of the smaller mammals are to be met with, but there appears to be no records of Bats, Shrews or Bank Vole. Information in this branch is particularly desired. Only three Reptiles appear to have been recorded, Adder, Common Lizard and Frog. Fishes to be met with are chiefly Trout, which are strictly preserved. Minnow, Loach and Miller's Thumb are also found in the river.

Birds.—Most of the moorland species common to Yorkshire are to be found. Curlew, Golden Plover, Snipe, Lapwing, Merlin and Twite. The Peregrine and Raven used to nest regularly upon Pen-y-ghent, but keepers and egg-collectors generally effectively prevented their rearing young. The Tawny and Long-eared Owls occur, as also the Kestrel and Sparrowhawk, and along the banks of the river and streams, Grey, Yellow and Pied Wagtails, Sandpiper and Kingfisher may be observed.

[P.T.O.]

that flows from it takes a contrary path. This last is the Outershaw Beck which is met at Beckermonds by Greenfield Water, and is thenceforth called the Wharfe; the first, as we have seen, joins Gale Beck above Selside and is thenceforth called the Ribble. Here, then, we touch the line that parts the eastern from the western water-system. We have been told as to one ridge on the Fell, some 1880 feet above the sea-level, that in a time of rain the water from one side of it runs into the Outershaw Beck and the water from the other side of it into the Cam Beck. Thus a rain-cloud might be hanging over the Fell, and a passing breeze might decide whether that cloud should shed its waters on this side of the ridge or on that; that is, whether they should make eastward for the German Ocean or westward for the Irish Sea.

BROW GILL. From the foot of Ling Gill may be seen a farmhouse. In front of the house there is a wooden bridge. We cross this and keep near the wall until we reach a stile. When in the next field we keep well to the right, as if making for Penyghent, and in a few minutes we reach another glen. This is Brow Gill. Here there are no sloping banks. The stream has simply cut for itself a channel in the rock; but in doing this it has made its path very interesting. Brow Gill has its special features, and is well worth exploring, even after Ling Gill has been visited. At one part of its course the stream dips under a platform of rock which is called "god's bridge,"—so called probably because it was the work of nature, not of man. This is a good point at which to begin the ascent of the ravine. A little way above "god's bridge" the



Cam Fell
from Tangstrothdale
Chase

Several species of Warbler
as Whitethroat, Sedge Warbler
its and Skylarks will also be
icate all the species likely to

ENTOMOLOGY.—Mr. Rose
d of systematic investigation
s time, especially in Skelwith
pes of Pen-y-ghent are:
nbyx rubi, and Pyrausta
usia cambrica, Scodionia
emia munitata, Cidaria
Hymenoptera.—*Bombus*
vestris, *V. rufa*, *Odynerus*
Both the handsome diptera.

A Meat Tea will be provided
rters, at 4 p.m., at 2/6 each.
A General Meeting will be held
reports of Section Leaders
It is particularly requested
warded to the Hon. Secretary

ORKSHIRE NAT

hes to become a member
will subscribe FIFTY
i the end of the year
Members are entitled to



Browgill Cave



XII.—Lodge Hall, Ribbleshead.....1687.

most beautiful part of the ravine is reached. Two almost parallel walls of rock are closed at the farther end—some thirty yards off—by a cascade; above this are rugged cliffs; from the foot of the cascade to the point where we stand there is a pool of clear, quiet water; and this, with the vegetation that clings to the rocks, makes a very beautiful picture. Beyond this, the ravine is very rugged and then narrows and ends with Brow Gill Cave. This is an airy, roomy cavern. We may get a good way into it, and a good idea of it, by the help of the light from its mouth. The most curious thing in this cave is its fluted floor,—the many razor-like plates of rock that have been cut out and shaped by the running waters, and which all lie along the line of the stream.

By this time we probably want to see Horton, although Birkwith Cave, Jackdaw Hole and Sel Gill might be visited on our way. We see at a short distance from Brow Gill Cave a farm-house with a cluster of trees near it. The road passes through the farm-yard, and a walk of three miles will bring us to Horton Station.



XII.
AMONGST THE ERRATICS.

WE have met with "erratics" in all our walks, but in our former pages we have called attention to only one,—the big block that lies on the way to Winskill. Travelled blocks are dotted here and there over the whole district. The stranger must have noticed many. Their individuality is often well-marked. When we see them at a distance we sometimes think they are sheep; but when we reach them we find that they are not dark-coated sheep, but dark-coloured stones. They are to be seen in all sorts of places and positions; lying in the hollows amongst the hills, or on the top of scars a thousand feet high. We sometimes see them at the foot of a fence-wall, built into it, their colour contrasting with the grey limestone of which the wall consists; sometimes half-embedded in the earth; sometimes perched like goats on the brow of an overhanging cliff. These are *erratics*. They have got away from home. They have been broken off and borne away from their parent-rock. One may be a block of limestone lying on the millstone-grit; another, a block of grit lying on the limestone; a third, a Silurian block lying on either the limestone or the grit. In each case it has wandered from its native place. The Silurians are the most notable. Many of these are as hard as iron; and, when broken, their fragments ring like iron. The hammer has as little "bite" upon them as upon a blacksmith's anvil.

